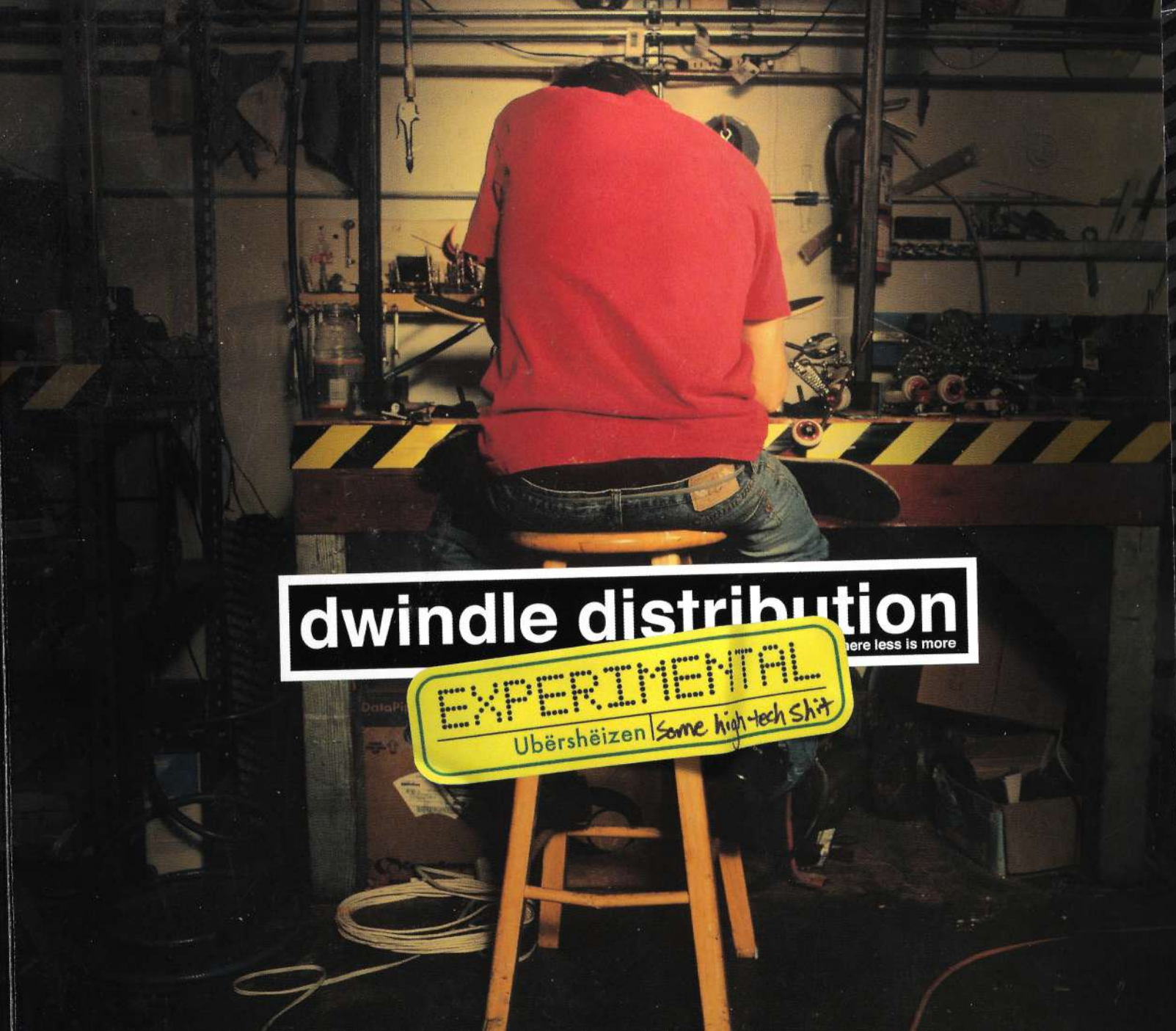
dwindle distribution
here less is more
EXPERIMENTAL
Ubërshëizen
Some high-tech shit

über scheißen süperboard concept

Rodney Mullen: kickflip primo to primo to shuvit out

über *adj.* above, beyond, across, atop, over, super.

scheißen *n.* shit.

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photos: trinh

dwindle experimental
some high tech shit

Dwindle Experimental Introduces
The Über Scheißen Concept Board

Since its inception over 15 years ago, Dwindle Distribution (through its progenitor, World Industries) has been at the forefront of skateboarding. Today Dwindle is home to eight skate companies with an arsenal of over 40 pro riders and sponsored skaters worldwide. With bases in 4 continents, Dwindle designs, produces and sells the entire spectrum of skate products utilizing the best skaters, artists, designers, chemists, and engineers in the field.

Now Dwindle is pooling its resources to create Dwindle Experimental. It is a division focused solely on bringing product development to the next level. With the teamwork of Rodney Mullen and Oust Engineering* plus Almost, Darkstar, Tensor, C.L. Composites, and DSM, Dwindle Experimental set out to develop a concept skateboard that would help pave the way for the future and better equip skaters to go to the next level.

Every part of a contemporary skateboard's existing components has been torn apart and then re-thought from a combined pro skating and engineering point of view. From there it has been tweaked and assembled to create one unified Über board, designed to be better suited for the future of skateboarding as we see it. The culmination of all this work creates an entirely new breed of Über Scheißen.

Some of these components have been tested for months, while others are still in the trial phase. This is a snapshot of where we are in the evolution of Über Scheißen technology. As this technology is refined and developed for mass production, it will evolve beyond the experimental phase into full-blown Dwindle hardware which will become available over the coming 6-18 months.

This catalogue outlines the features and thought processes that have gone into the production of these 50 handmade, first edition prototype Über boards. We hope they will prove to be the first glimpse of tomorrow's skateboard.

POWERED BY OUST *Oust Precision Engineering &Manufacturing. Oust Inc. is a concept engine devoted to the innovation, implementation and generation of high-end components, founded by Carl Lekavich. Carl has accumulated numerous patents in diverse fields. His aerospace and archery background give Oust access to hundreds of highly specialized, precision manufacturers across the U.S. and Europe. Carl has an outside perspective connected to a knowledge base of peers from some of the most advanced engineering groups in the world.

Studio photos: Joe Brook

Overview of a Balanced Über Board

We utilized better materials and production methods to create a truly high-performance skateboard. By modifying the components (deck, wheels, board) through their individual constituents (axles, kingpins, etc.), we have both lightened and redistributed its weight to function better as a whole. Not only are the components stronger, faster, and more responsive, the overall board flips and handles more precisely.

board's axis

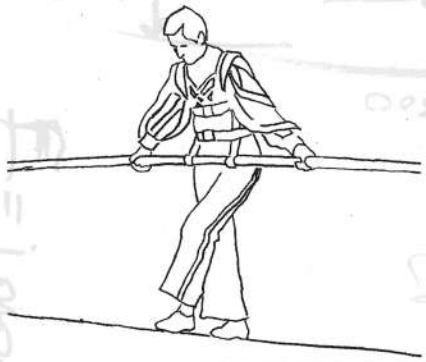
This deck is mounted on a loose wire which cuts into the bottom plies, slightly off its natural center of gravity. While stationary, the trucks dangle toward the ground under the drooping wire. Spinning the deck forces the wire to make loops, like a long jump-rope held by 2 people. Anything that spins around an axis that's not located at its natural center of gravity will yank that axis in a loop-like motion.

• **Über Wheels:** Aluminum Hubs are perfectly concentric with the bearing seat, so it spins better and dampens high frequency wobble. The bearings conserve their valuable energy and no longer deform their urethane housing by twisting in their sockets.

• **Über Trucks:** Modified steel parts create a lighter, stronger product, yielding a more balanced overall deck with greater fliptrick control.

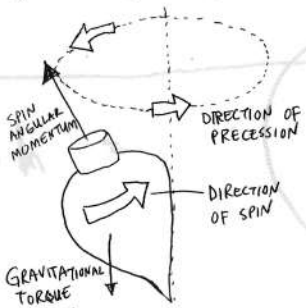
• **Modern composites** allow the Über Board to be both lighter and stiffer, while still feeling natural. Lateral stiffening of the rails gives more control, plus it minimizes torsional flex and rebounding stress waves.

über bäläncë

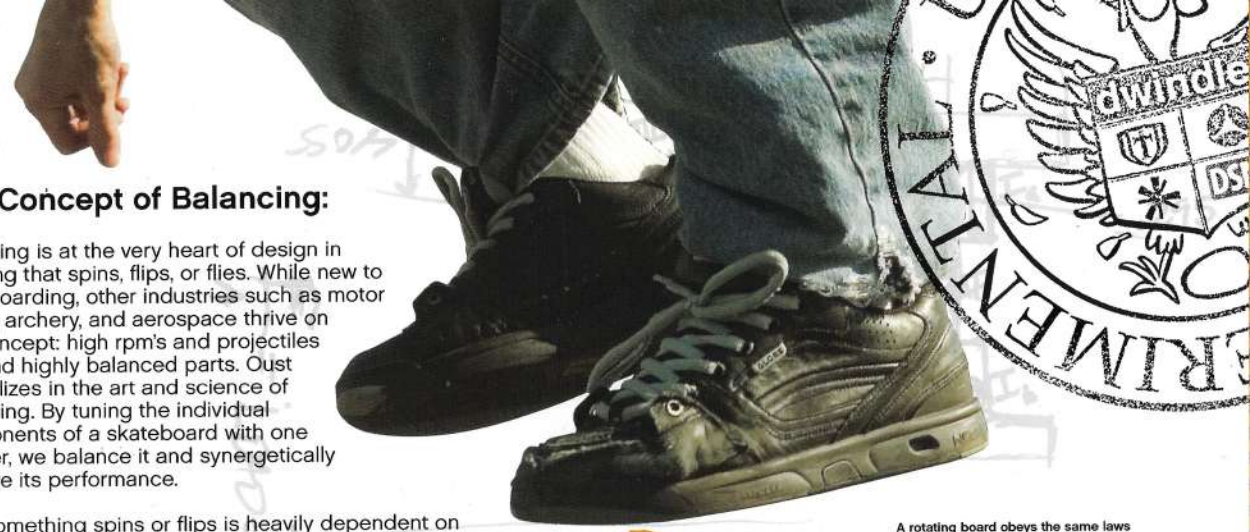


The long stick stabilizes the walker. The stick extends weight across the center axis (rope), increasing his rotational inertia, keeping him steady. Heavy axles have a similar effect on fliptricks.

Small wheels have less rotational inertia and accelerate quicker; therefore, tech skaters usually ride them. Rotating boards act on the same principles. That's why light boards with tiny wheelbases do quicker 360-flips.



A spinning top will precess dramatically as it slows down; the tip of its axis moves in a circular motion. The more the top falls out of balance, the more it precesses. Wheels, decks, and even planets behave the same way: the further something spins off its center, the harder it yanks that axis into bigger loops, wasting valuable energy.



The Concept of Balancing:

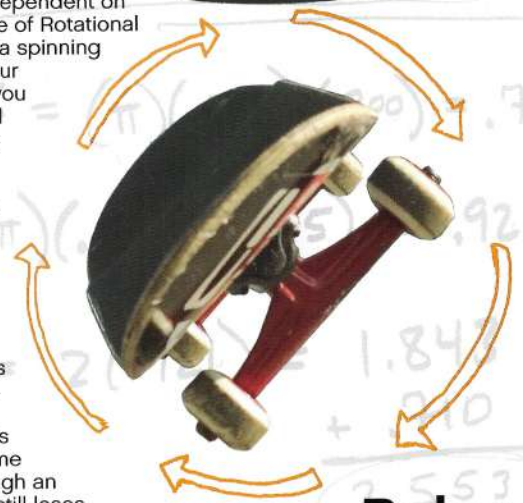
Balancing is at the very heart of design in anything that spins, flips, or flies. While new to skateboarding, other industries such as motor sports, archery, and aerospace thrive on this concept: high rpm's and projectiles demand highly balanced parts. Oust specializes in the art and science of balancing. By tuning the individual components of a skateboard with one another, we balance it and synergetically improve its performance.

How something spins or flips is heavily dependent on its weight distribution. This is the essence of Rotational Inertia. The inertial "tug" of resistance of a spinning wheel embeds itself into the timing of your fliptricks, and it factors into every move you make. The more the weight is centralized near the axle, the quicker it reacts; that's why wheels shrank as skating got more technical. Whether they know it or not, pro skaters become masters of physical concepts like this.

Everything has a center of balance. Unless it's a totally uniform, symmetrical ball, that center changes with the object's orientation with the ground. A spinning top tilts as it slows, changing it's center, making it tug its own axis around in a circle which drains its energy even faster. On a larger scale, spinning planets tug at their axes and orbits to do the same thing, which is called precession.* Although an unbalanced wheel is stuck to an axle, it still loses energy trying to force it around in a similar manner.

When a deck flips, it yanks its axis in a big loop, which fights the flip and leaves the board slightly offset from where it started. By achieving greater balance within the overall deck and pulling weight toward the axis of a flipping board, we minimize that loop and add quickness and precision to fliptricks. Likewise, balanced wheels spin longer and faster. Together, we have come up with a first generation of Über boards: not only are the components better, but they are tuned to give the deck more overall balance as a whole.

*The precisely calculated precession of Mercury's orbit was one of the most dramatic early confirmations of Einstein's General Relativity.

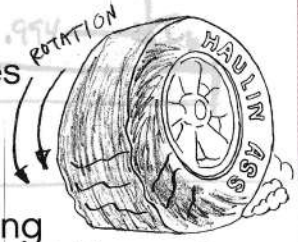


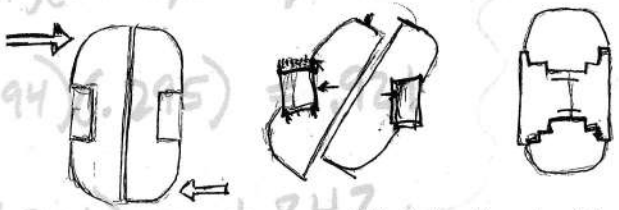
A rotating board obeys the same laws as anything else that spins. By modifying components to create a more responsive, balanced board, we hope to enable skaters to have quicker, more precise fliptricks so that they can take them to the next level.

Balancing is at the very heart of design in anything that spins, flips, or flies.

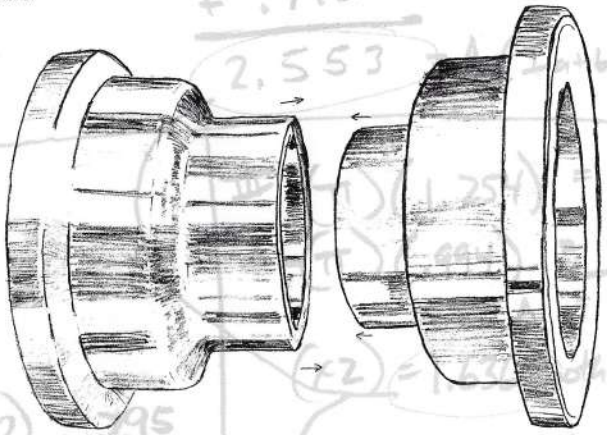
Overview of the Tensor/Oust Über Wheel

Fitting a wheel with an Aluminum Hub yields a truer spin and reinforces the urethane against the enormous torsional loads generated from street skating, maximizing speed, responsiveness, and longevity.

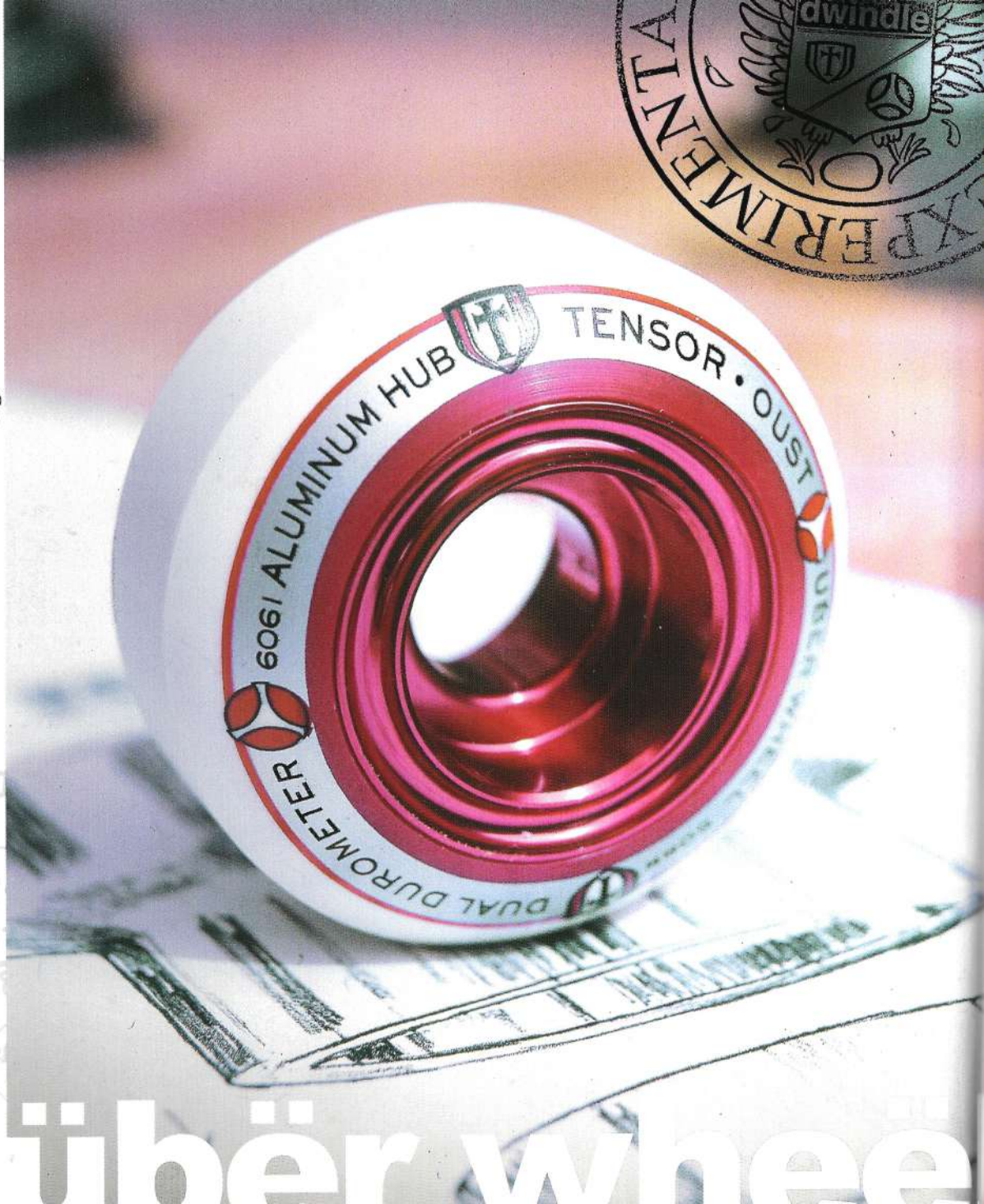




Even the slightest tic-tac sends a lateral thrust that tries to fold the wheel over. It's more dramatic to visualize a wheel cut down the middle, with each piece held vertically by one bearing's grasp on the inside of the bearing seat. Since the bearings are locked onto the axle, they can't move. They gouge into the twisting urethane, stretching and degrading the bearing seat as it tries to keep the wheel vertical.



The hub not only spreads the load over 280% of the surface area of the bearings, it braces the urethane laterally, locking it in place. The "moosh" you normally feel on hard turns is virtually eliminated. Instead, it feels like something is pushing you through them.

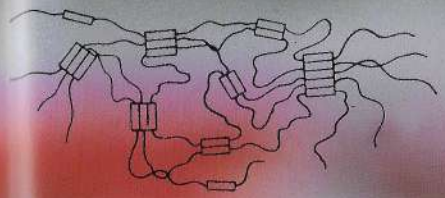


Primary Issue: Every movement a skater makes transmits from his feet through the deck, then truck, then axle, then bearing, straight into the urethane. The narrow edges of the bearings' outer races dig, twist, and gouge into the soft bearing seat, igniting stress waves which radiate outward throughout the wheel. The outside/tread is heated, gripped, and abraded by the street as it pays in equal and opposite magnitudes for each thrust the skater makes. The counter-forces from the tread against the bearing seat stretches and degrades the urethane, aging it, and deadening response.

Our Approach: The interlocking Aluminum hub locks the bearings together and minimizes the gouging effect of the bearings by spreading the load over the whole area of the hub itself. The stepped hub braces the tire laterally with over 280% of the surface area of the bearings, mitigating destructive effects and quickening their recovery time. Instead of having your movements absorbed and lost to the urethane's flex, the hub takes the brunt to yield a supernaturally responsive ride. Even the early prototypes show a drastic improvement over the standard design.

- The machined hub creates a perfectly centered bearing seat. Even the best cast wheels suffer from pin movement in the molds which offsets the bearing seat.

- The tire portion of the prototype Über wheel is still under development. For testing, we chose the best high rebound formula we could find; the tread has incredibly good abrasion resistance. It was developed by Darkstar. We look forward to even further development working with other high-end urethane companies.



Urethane is made up of "hard" and "soft" segments. The hard parts form clusters in an ocean of long, flexible molecules.

- Urethane itself is made up of two phases: there's a hard and a soft phase. Polyisocyantes and chain extenders (usually glycols) form the hard blocks; the soft segment is made up of long chain polyols. The hard segments aggregate to form ordered crystalline domains in a sort of sea of slinky chains of amorphous soft segments. That's why urethanes have their unique qualities and explains how there can be so many different formulations and "feels" to it. Heat and stress break down this internal structure relatively rapidly. This gives insight into the reason why the bracing and cooling effects of the hubs add so much life to the wheel.

$A_{Ia} = (\pi)(.994)(.295) = .921$

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$+ .710$

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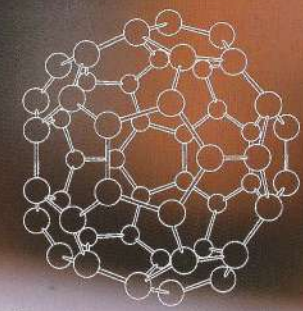
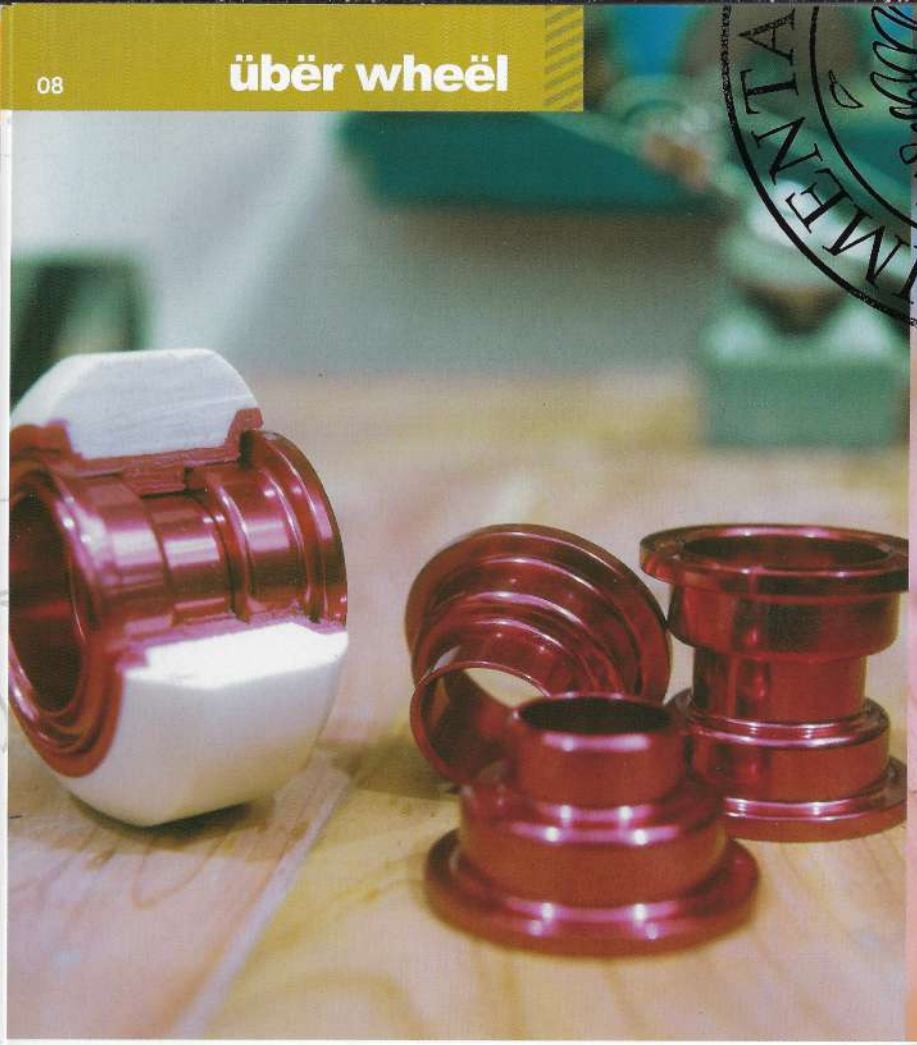
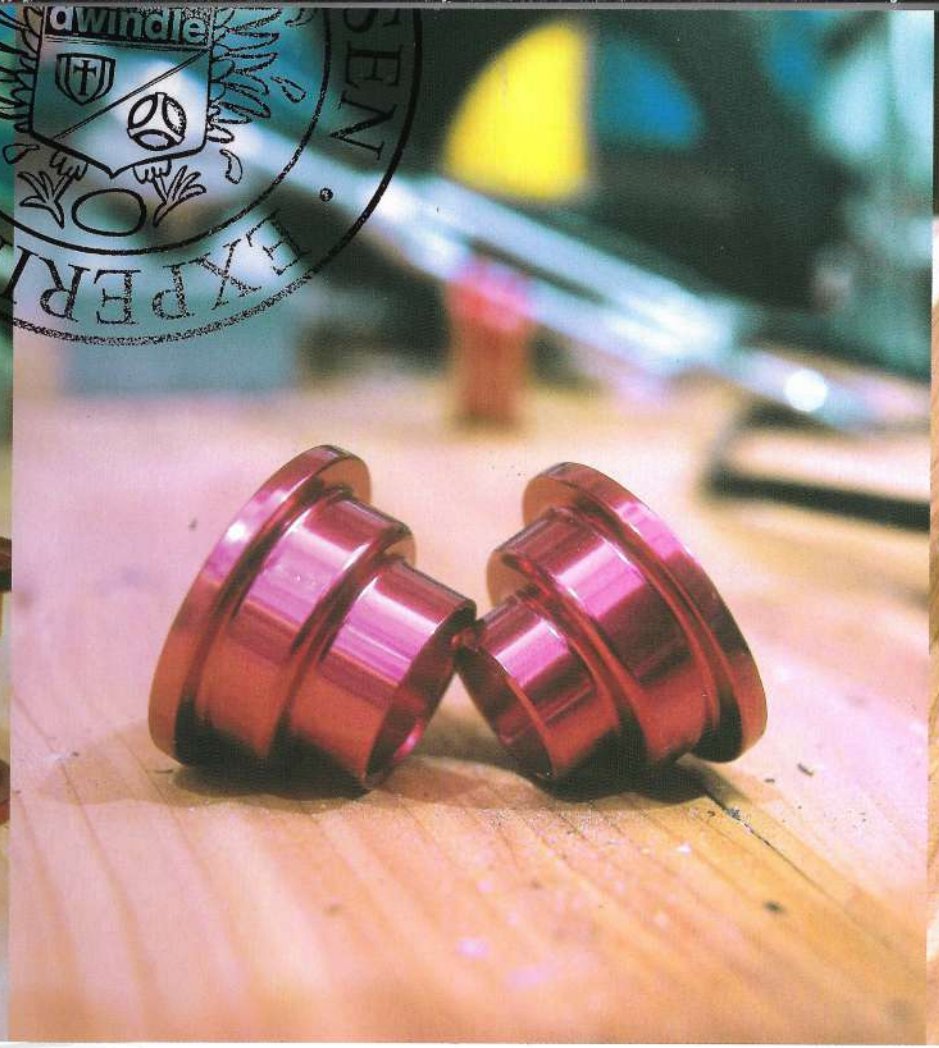
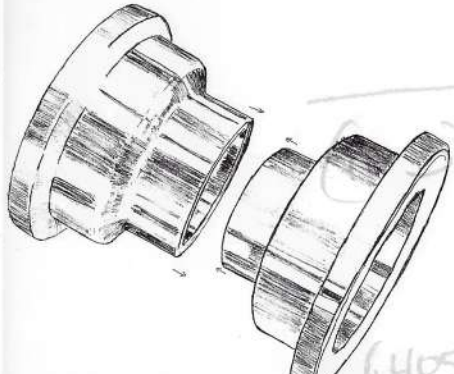


SCHIESSE MOLECULE



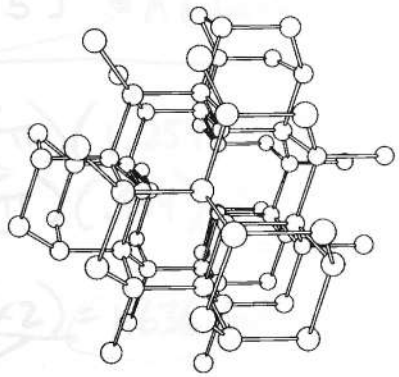




• **The high tolerance Über Hub** is telescopically linked and unifies bearing, axle and wheel to create a longer spinning, longer lasting, quicker responding wheel.

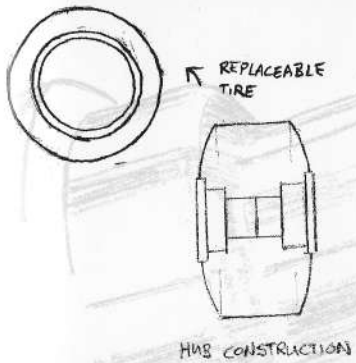
• Stiffening of the bearing seat heartens responsiveness and adds longevity by alleviating much of the load on the urethane.

• The Aluminum hub acts as a heat sink to pull heat out of both the urethane and bearing, greatly preserving the performance and longevity.



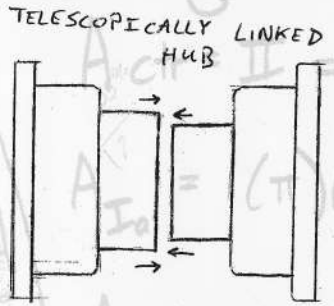
• The hubs are cut from 6061 extruded, heat-treated Aluminum bar which has a linear grain molecular structure un-disturbed from its original fabrication. In contrast, casted pieces have been melted where elements are skewed out of ratio due to differential evaporation; its lattice structure becomes less organized, yielding a weaker product.

• All hubs are cut by Oust's 4-axis, sub-spindle CNC lathe with live tooling. It holds a tolerance of +/- 0.0005". This insures a tight bearing fit and total concentricity of the hub itself.



• **Dual Durometer Replaceable Tires:** The hub itself is encapsulated by a double-pour dual durometer, ridged belt of urethane designed to bite onto the hub system. The complete wheel forms a "triple durometer" system.

• The Hub/tire system is concentrically balanced and allows for a wide range of replacement tires at lower prices



• The hubs lock telescopically, protecting the wheel from the opposing thrusts of the bearings.

• The hub provides a 2-fold bracing (lateral and core) to the high rebound tire, virtually eliminating "moosh" (or "give") in the urethane.

Overview of the Oust Enhanced Tensor Truck:

We supercharged the basic Tensor trucks with lighter, stronger, precision-made parts.

über trück

• Über Axles & Kingpins are made of high grade stainless steel, CNC modified for stronger, lighter products.

• Über Axles have .001" tolerances to fit the bearings, bend less, 44% lighter, and prevent axle slippage better then knurls.

• Über Kingpins are 39% lighter and stronger than standard industry kingpins.

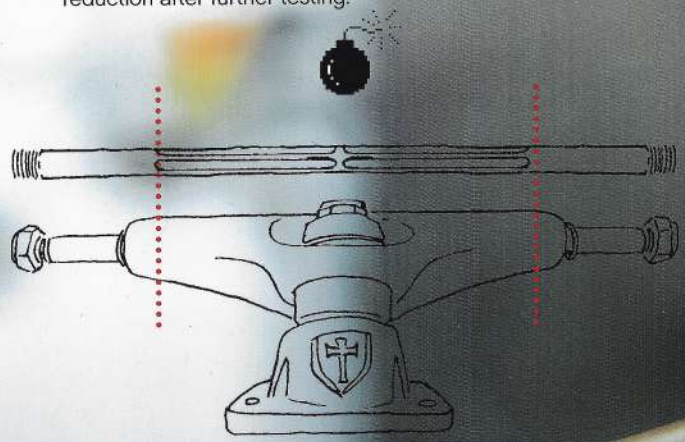
Primary Issue: The steel parts of trucks are generic for practically the entire industry. These parts are predominantly lower grade steel, hard to modify, and generally have low tolerances. Customizing better material is difficult and expensive, and until now has been left largely untouched.

Our Approach: We enlisted Oust's engineering and precision manufacturing expertise to design customized steel parts out of better materials. Both the axle and kingpin were made to combat the forces specific to street skating, while cutting away unnecessary bulk.

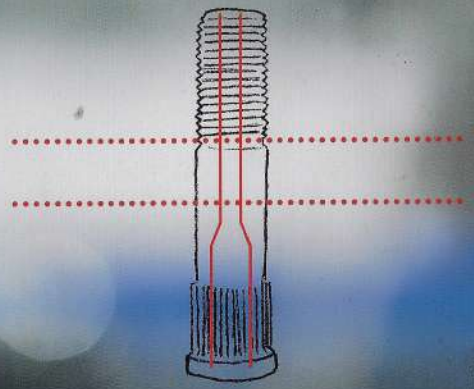
***Experimental Bushing Caps:** We are presently experimenting with a 7075 Aluminum bushing cap that tightly embraces the urethane, preventing it from extreme distortion. The urethane can be better utilized—compressed rather than simply pinched. It will do wonders preventing wheelbite. We will use this cap system to develop bushings with even higher rebound than was previously allowable because of the concomitant distortion (elongation) problem.

· **Uber Axles.** The 416 stainless steel is significantly harder and much stronger than the 1018-series steel axles commonly available. Given this benefit, we cut out large unstressed portions of the axle housed inside the hangar, yielding an axle that is 44% lighter, yet even stronger in the critical regions. The inside channels lock the axle in its Aluminum housing far better than existing knurls. Also, the high tolerances on the axle diameter fit the bearing tighter, allowing less slosh and wobble, producing a better spin.

*Though we are confident with the fundamental design of the axles, we will gradually hone in on the optimum weight reduction after further testing.



· **Uber Kingpin:** Again, because the 416 stainless is so much stronger, we simply hollowed out the center of the kingpin to reduce its weight by 39%. At this stage in development, we believe there is enough material in the standard region of stress concentration to outperform the existing kingpins on the market.



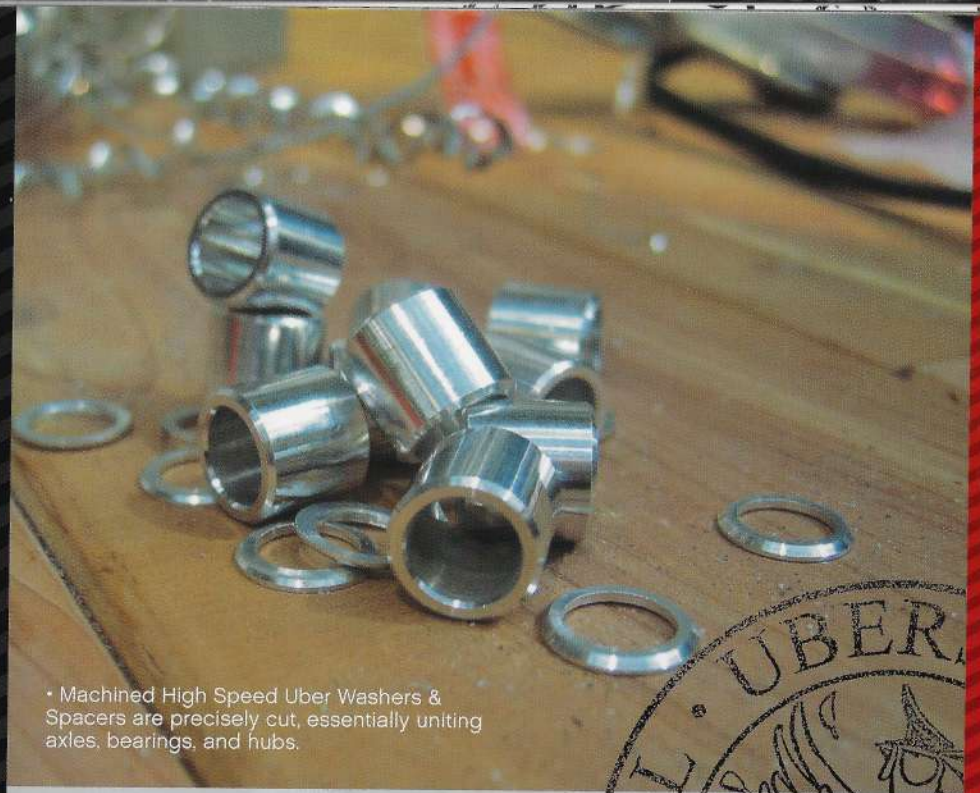
über trück

Below this crucial area, we drilled with a larger diameter bit, tapering into the smaller hole gradually, which adds more strength. Aerospace engineering at its finest...

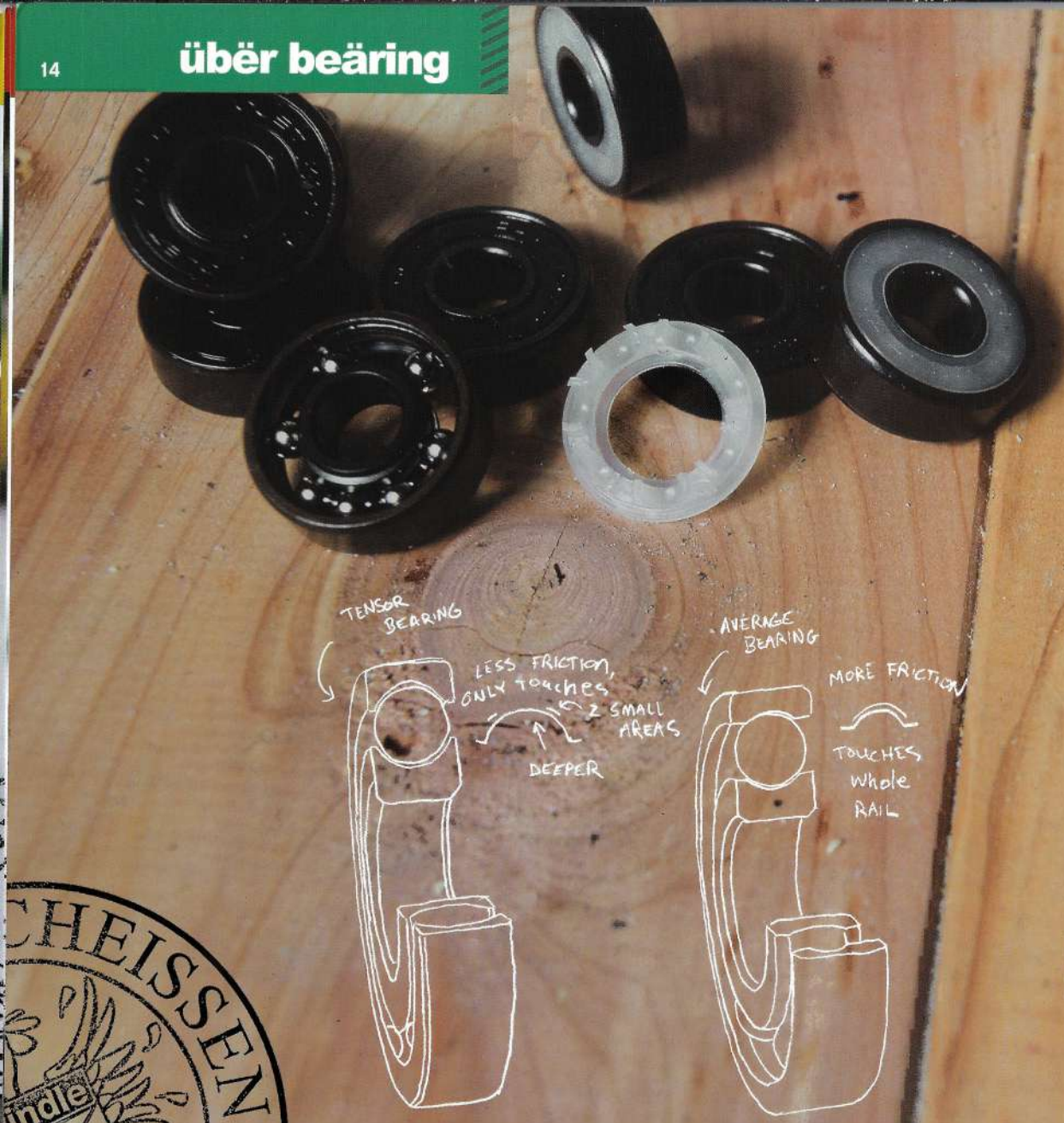
*This is the first prototype of the kingpin. We may use an even higher grade material, beef up certain regions if breakage occurs, or possibly even lighten them if they still prove to be stronger than the existing kingpins

These modified parts move the truck's center of mass toward the baseplate.

By fitting Tensors with lighter axles and kingpins, we not only lighten the truck, we pull weight out of the areas furthest from a board's natural center of gravity. This enables the deck to do tighter, quicker flips.



• Machined High Speed Uber Washers & Spacers are precisely cut, essentially uniting axles, bearings, and hubs.



Overview of the Oust MOC 9, SS Edition Bearing

It's a supercharged version of the Tensor MOC 5*. It is a faster, more durable bearing than even the MOC5 because it has higher tolerances, smoother finishes, and a new cage design.

- Magnify any metal surface high enough, and craters or pores will be visible. The SS Edition features an extra polishing step, improving the finish of both the ball and race, reducing the surface pits to less than half their usual size, within 3-4 microns (normal bearings are generally 5 times larger).

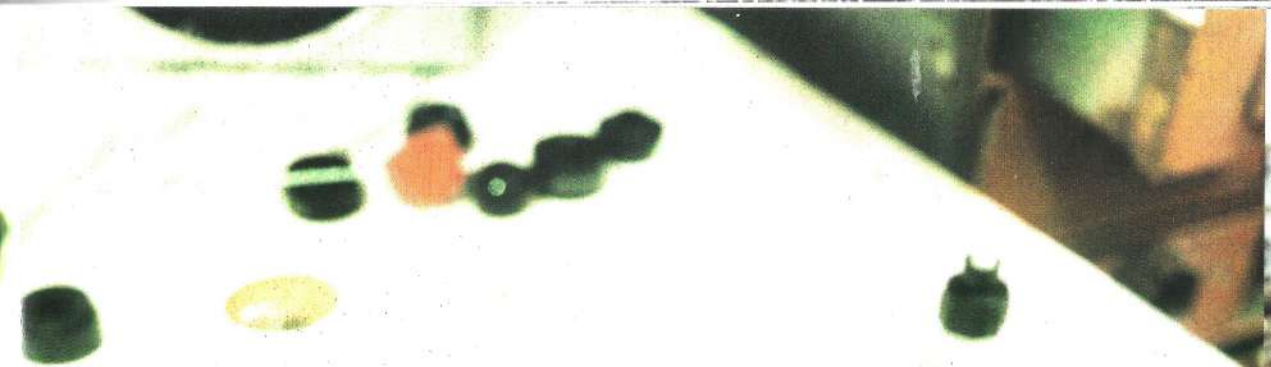
- **METOL** is used as an additive to the existing Oust lubricant. It increases overall lubricity and adds longevity to the existing Oust oil. It is a patented product.

- ABEC 9* tolerances.

The Oust Approach: Normal bearings were made to spin on flat spindles, with negligible torsion (sideways) loading. All Oust bearings share the tailored shape of the deeper groove within the race designed to spread the load of the balls evenly as it holds the balls better in place. These modified races were made to withstand the torsional loads inherent to skateboarding: they spin faster and last longer than standard bearings, particularly high-rated ABEC ones. The groove's cross section differs slightly from the balls, allowing the ball to only touch part of it at any given time. This smaller footprint allows less drag than fragile, shallower-grooved standard bearings. Other features of the Oust design go well beyond ABEC specs.

über beäring

Magnify any metal surface high enough and craters or pores will be visible.



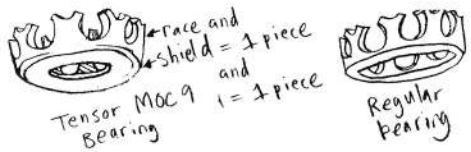
• The balls and races are both hardened to at least 70-Rockwell. In addition, the internal pieces have a highly tuned, slightly unequal hardness that prevents them from grinding each other apart.

• Oust has exclusive rights to a patented oil. This extremely light lubricant fills the micron-sized pits (porosity) in the steel races and balls, and it provides a coating action that helps protect the bearing from rust and wear.

• Their steel shields do not dent the same way the standard cheap Aluminum shields do, often ruining bearings before they're even ridden.

• All Swiss CNC machines manufacture the races to tolerances within .0001".

• The protective shields have multiple unique design features, including tapered grooved edges where the shield meets the bearing in order to reduce drag, allowing more speed.



• Enhanced, self lubricating cages with patent pending design. The newest SS Edition cage is actually unified with the outer shield and has a patented oil hole for easy maintenance.

*ABEC determines tolerances on dimensions of the bearing, such as the race's width, inner & outer diameter. The general ABEC qualifications paint only a partial picture of what makes a bearing good for skateboarding. It should also be noted that high ABEC ratings mean that the internal pieces are working together under extremely cramped conditions, which can be more destructive to the bearing under certain circumstances.

MOC (Machine Optimum Clearance) is trademarked by Oust Inc., covering a broader range of considerations more pertinent to skateboarding and the overall function of the bearing. The Oust logo, MOC5 and MOC9 SS are trademarks of Oust Inc; "Oust" is also a registered trademark of Oust, Inc.

Overview of the Uber Deck

By combining carbon fiber technology with the basic 7-ply maple construction, we produced a deck that has a natural feel with supernatural performance.

über dëck

Primary Issue: Skateboarding is all about feel. As tempting as modern materials are to use, it's hard to create one that feels natural, especially on the tail and nose areas that are crucial to every ollie. "Bumpers" are often added, which tend to feel pretty weird. Laminating thin plies of synthetic fibers is another way to enhance performance, but it generally provides only marginally better pop because the pieces are too thin to offer much inherent structure to the deck. Also, in efforts to lighten decks, companies offer thinner cross-plies, which saves weight and doesn't reduce overall pop much. The drawback is that there is more lateral flex, which means the edges of the rails aren't as crisp and defined under your feet, hindering fliptricks.

Our Approach: This was developed by Peter Hill and C.L. Composites.* After experimenting with many different layups, they arrived at a method using an actual deck within a deck. The internal carbon fiber foam deck is ultra light and nearly as stiff as metal. It acts like rebar, or a skeleton embodied by a standard 7-ply layup. It also vastly improves the lateral rigidity. The deck wears, slides, and looks like a normal 7-ply, but it's lighter and has a supernatural pop that lasts far longer than normal decks.

über scheißen

• A complete carbon fiber deck rides and sounds like a metal one, only lighter. It's way too rigid by itself. By embedding it within a 7-ply, its metallic feeling goes away, while providing far more snap than a pure wooden deck.

• The cell structure of wood provides an almost unbeatable "bumper" system because the individual cells cave in only where they need, preserving the cells behind them. Few synthetic materials have this property. Our design preserves the best qualities of a wooden deck, while adding where it lacks.

über dëck

- **Lateral stiffening for consistency and accuracy:** Flip tricks depend heavily on exactly the moment your foot swipes across the edge of your deck. By minimizing flex along the rails, your board control improves.

- The carbon fiber framework undergirds the wood, acting like rebar. Since the wood is supported, the individual cells break down far slower than on an unsupported deck, creating a much longer lifespan.

- The carbon fiber structure within the 7-ply has a light, low-density foam core which reduces the overall weight substantially.

- By reducing weight and adding rigidity (particularly laterally), the deck reacts more quickly to every movement, and flips faster and more precisely.

There's more to skateboarding than actual skateboarding.

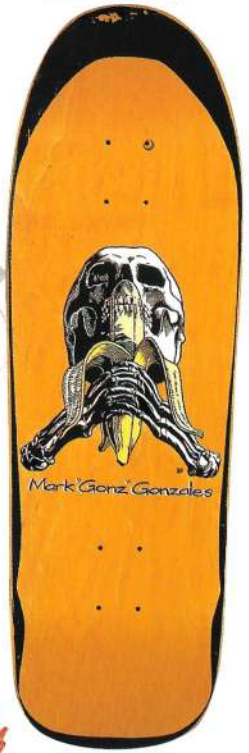
It's a culture so tight and distinct that skaters half way across the planet probably have more in common with you than most people do in your own home town. As diverse as skaters can be, there's something we share, and it shows up in all kinds of ways—from music, clothes, and art to basic attitudes, just to name a few. We even have our own language. Whatever it is that defines us, few companies have captured it better than World Industries and its progeny.

über gräphics

About 15 years ago,

Steve Rocco founded a company that changed skateboarding forever. It started a revolution and ushered in a new era of skater-owned companies. As brilliant (and crazy) as Steve is, this could not have been done without the graphic genius of Marc McKee. Not only were the graphics done well, they somehow captured everything that rang true in skateboarding at that time. From oil paintings to stick-men, Marc came up with graphics that unflinchingly expressed what skateboarding was, time after time. From Vallely's Animal Farm to Devil Man and his minions, Marc's work became the hallmark of World Industries, and helped make it one of the biggest, most influential companies in skateboarding's history. But that's only half the story.

Marc's work goes well beyond the World Industries name. At one time or other, he's done graphics for some of the world's most respected skaters. From individual pro models, to creating the entire Reaper series, McKee has become the most prolific, innovative, and consistently successful artist in our world. His contribution to World & Dwindle's companies is incalculable, not only from his art, but from the hundred's of ad's he has generated over the years as well as his insight into brands themselves. Beyond that, Marc McKee has had a profound influence on the art and expression of the culture of skateboarding itself.



GRAPHICS 1989 to 2004
by Marc McKee

dwindle experimental

dwindle distribution
where less is more

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